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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/079,464	02/22/2002	Kanji Otsuka	011703	6674

38834 7590 09/22/2005

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EXAMINER	
JONES, STEPHEN E	

ART UNIT	PAPER NUMBER
2817	

DATE MAILED: 09/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/079,464	OTSUKA ET AL.	
	Examiner	Art Unit	
	Stephen E. Jones	2817	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 July 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-26* is/are pending in the application.

4a) Of the above claim(s) *4,5,12,19-21,24 and 26* is/are withdrawn from consideration.

5)☒ Claim(s) *23 and 25* is/are allowed.

6)☒ Claim(s) *1,2,6-8,13-15 and 22* is/are rejected.

7)☒ Claim(s) *3,9-11 and 16-18* is/are objected to.

8)☒ Claim(s) *1-26* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *7/5/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Claims 4-5, 12, 19-21, 24, and 26 remain withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 1/13/05.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 13-14, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Otsuka et al. (JP 2000174505) in view of Sochoux. (both of record).

Otsuka teaches a terminated bus including the identical transmission line structure as claimed (e.g. see Figs. 3 and 9).

However, Otsuka does not teach that the terminal resistor is provided with an insulator (i.e. regions of the substrate) having a larger dielectric loss angle than the substrate that is adapted to absorb/dissipate high frequencies (Claim 1), that the resistor is a chip, or that the transmission lines are multiple pairs each having a termination (Claims 13-14). Otsuka also does not teach that the insulator in the vicinity of the resistor is mixed with magnetic material or the claimed adapted functional limitations (Claim 22).

Sochoux teaches a printed circuit board having a termination for a clock transmission line (i.e. digital bus) including a terminal resistor and a ferrite magnetic material (i.e. an insulator) in the vicinity of the resistor, and the ferrite reduces EMI (i.e. it absorbs high frequency electromagnetic energy). Also, the ferrite can be doped with a less conductive material (i.e. mixed with an insulative material) (e.g. see Col. 5, lines 16-24). Also Sochoux teaches that the termination can be formed as a package (i.e. a chip) (e.g. see the abstract).

It would have been considered obvious to one of ordinary skill in the art to have substituted terminations such as taught by Sochoux in place of the generic terminations in the Otsuka device, because it would have been a substitution of well-known art-recognized equivalent termination means providing the advantageous benefit of improved EMI control such as suggested by Sochoux, thereby suggesting the obviousness of such a modification.

Also, it would have been considered obvious to one of ordinary skill in the art to have included multiple pairs of terminated lines in the combination of Otsuka and Sochoux, because it would have provided the advantageous benefit of multiple transmission lines for communications between multiple sources and multiple loads as desired by the user.

Furthermore, since Sochoux is silent as to the particular ferrite material and especially since the ferrite is for absorbing EMI, one of ordinary skill in the art would have been motivated to select the absorbing ferrite material to have a higher loss factor than the substrate so as to provide the advantageous benefit of EMI reduction in addition to the substrate material. Also, note that substrate materials are commonly made of low loss materials such as alumina (i.e. much lower than ferrites).

Also, since the combination results in the same structure as the presently claimed invention, as an obvious consequence of the combination it is adapted to be capable for functioning in the same manner.

Claims 1-2, 6-8, and 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Otsuka et al. (JP 2000174505) in view of Fukaya (both of record).

Otsuka teaches a terminated bus as described above.

However, Otsuka does not teach the terminal resistor is provided with an insulator (i.e. regions of the substrate) having a larger dielectric loss angle than the substrate that is adapted to absorb high frequencies (Claim 1), that the insulator includes glass and modified ionized additive (Claim 2), that the resistor is a chip, that the transmission lines are multiple pairs each having a termination (Claims 13-14), that

the insulator covers the resistor (claims 6-7), or that the insulator is a mixture of glass, resin and ionized additive (Claims 8, 15).

Fukaya teaches a chip resistor having a glass coating (i.e. an insulator). The coating can be CaO (i.e. an ionized additive like applicant's disclosure) mixed with an organic vehicle ethyl-cellulose (i.e. a resin) (e.g. see Col. 6, lines 1-8 and Table 2).

It would have been considered obvious to one of ordinary skill in the art to have substituted resistors such as taught by Fukaya in place of the generic termination resistors in the Otsuka device, because it would have been a substitution of well-known art-recognized equivalent resistor means providing the advantageous benefit of excellent weather resistance and stability (see abstract of Fukaya), thereby suggesting the obviousness of such a modification.

Also, it would have been considered obvious to one of ordinary skill in the art to have included multiple pairs of terminated lines in the combination of Otsuka and Fukaya, because it would have provided the advantageous benefit of multiple transmission lines for communications between multiple sources and multiple loads as desired by the user.

Furthermore, one of ordinary skill in the art would have been motivated to select the coating material to have a higher loss factor than the substrate, especially since substrate materials and circuit boards are commonly made of low loss materials such as alumina (i.e. much lower than ferrites), and the coating material of Fukaya is the same as Applicant's disclosure. Also, as an obvious consequence of the substitution resulting

in the same structure as the presently claimed invention, the coating would absorb high frequency electromagnetic energy and function in the same manner.

Response to Arguments

3. Applicant's arguments filed 7/5/05 have been fully considered but they are not persuasive.

Applicant's amendment of Claim 22 necessitated the new grounds of rejection thus rendering much of Applicant's arguments moot. However, Applicant argues that Sochoux does not disclose that the "material having less conductivity as being an insulator".

This argument is not persuasive. The ferrite bead is a resistance device in Sochoux and the material having low conductivity can be considered an insulator since the term "insulator" means to be a poor conductor and thus inherently the material having less conductivity can be considered a poor conductor since it is less conductive than a resistive material which by definition can be considered a poor conductor (i.e. insulative).

Also, Applicant argues that neither Otsuka or Sochoux teaches an insulator having a larger dielectric loss angle at least in the frequency region of the digital signal than the insulative substrate.

This argument is not found persuasive, especially since applicant has not addressed the motivation cited in the rejections regarding loss factors. Furthermore, Applicant has not provided substantive arguments regarding Fukaya.

Allowable Subject Matter

4. Claims 3, 9-11, and 16-18 remain objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

5. Claims 23 and 25 remain allowed.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen E. Jones whose telephone number is 571-272-1762. The examiner can normally be reached on Monday through Friday from 9 AM to 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert J. Pascal can be reached on 571-272-1769. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

STEPHEN E. JONES
PRIMARY EXAMINER

SEJ